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## PRIORITY DOCUMENT

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I, JULIE BILLINGSLEY, TEAM LEADER EXAMINATION SUPPORT AND SALES hereby certify that annexed is a true copy of the Provisional specification in connection with Application No. 2002950146 for a patent by R K CARDOW and WAL JOHNSON as filed on 10 July 2002.



WITNESS my hand this  
Twenty-second day of July 2003

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COMMONWEALTH OF AUSTRALIA

*The Patents Act 1990*

PROVISIONAL SPECIFICATION FOR THE INVENTION ENTITLED—

THERMO HYDRA – PRESSURE UNIT  
~~CIRCULATOR~~

The invention is described in the following statement:-

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This invention relates to an apparatus and method for promoting the healing of injuries or other abnormalities which are treatable through increased blood circulation to the affected area.

Injuries to muscles, ligaments and tendons etc. from recreation or work related activities are very common and the cost of these to the community is considerable. While there are a number of established treatments for these conditions such as manipulation, ultrasound and surgery etc. the inventor has found that in many cases these are insufficient or unduly traumatic for the patient.

It is therefore an object of this invention to ameliorate the aforementioned disadvantages or at least provide the public with a practical, ~~non-medical~~, non-intrusive alternative to known treatments. Accordingly this invention in one aspect discloses an apparatus for promoting or assisting the healing of an area of the human or animal anatomy by the application of two or more fluids of differing temperatures to said area, said apparatus comprising spray means, pressure pump means, reservoir means for the separate containment of said two or more fluids and heating and thermostat means, wherein in use of the apparatus said spray means is connectable to said pressure pump means so that fluids from said reservoir means at different selected temperatures as determined by an operator may be alternatively applied for timed periods to said area to promote and increase blood circulation thereto.

Preferably said apparatus further includes a tub and/or sump means for collection and reuse of said fluids after application to said area.

In another aspect the invention also discloses a method of using the aforementioned apparatus to promote blood circulation to an injured area of the human or animal anatomy comprising the steps of:

- selecting said differing temperatures for said two or more fluids, and
- applying timed sprays of said fluids to the injured area in a manner whereby the temperature of said sprays alternates between hot and cold.

One currently preferred form of this invention will now be described with reference to the attached schematic diagram.

The apparatus may comprise a tub 1 or the like of sufficient size for a patient to sit in. With this particular embodiment it may be of say 200 to 300 litres capacity although the invention is not limited to any particular size. A heated thermostatically controlled hot water tank 2 is provided at any convenient location adjacent the tub. Preferably this tank has a capacity of about 6 to 10 litres and may be heated to any user selected temperature between 30 and 50 C  $\pm$  1 C. Again however the invention is not limited to these particular specifications. With this embodiment a cold water tank 3 of about 20 litres is also associated with the tub.

There is a drain 4 in the bottom of the tub with a two way valve 5 between the tanks 2 and 3. This valve 5 can be set so that used spray water collecting at the bottom of the tub drains away either to the hot or cold water reservoir tanks. Also, shown below under the tub is a single or double stage pump 6. This may be of any suitable design with a pressure output of 200 to 400 kpa. It is connectable through an intake valve arrangement 7 to either the hot or cold water tanks. Attached to the output of the pump via a flexible hose 8 is a spray unit 9. This may be of any suitable design and with this embodiment it is preferably multi-head with a hand trigger. Finally the apparatus preferably includes a control panel 10 with pilot light, pump, heating element, on/off and thermo control displays.

In use of the apparatus a patient would sit or stand in the tub. The spray unit 9 would then be employed by the patient or an operator to direct alternate sprays of hot or cold water onto the injured area. Preferably as mentioned earlier the hot water spray may be about 30 to 40 C and last for 2 to 3 minutes. By manipulating the pump intake valve this would be followed by a spray of cold water at say 20 C for 30 to 60 seconds. The water from each spray would be collected in the appropriate tanks 2 and 3 for reuse.

Preferably the water spray used would comprise a solution of minerals and salts which together with the temperature differential operates to dilate blood vessels leading to the

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injured area and thus increase circulation. The specific nature of these minerals and salts as well as the preferred pressure and spray pattern is currently the subject of further research by the inventor.

It will thus be appreciated that this invention at least in terms of the embodiment disclosed provides a novel and useful apparatus for promoting the healing of damaged tissue in humans and animals. Clearly however the example described is only the currently preferred form of this concept and a wide variety of modifications may be made which would be apparent to a person skilled in the art. For example, the size, shape and configuration of the tub, the capacities of the tanks and pump, the temperatures used and time duration of the sprays used may all be varied according to application or design preference. The invention is also not limited to any specific materials for constructing the apparatus although stainless steel is currently preferred for the tub and water tanks.

Dated this 5TH day of JULY 2002

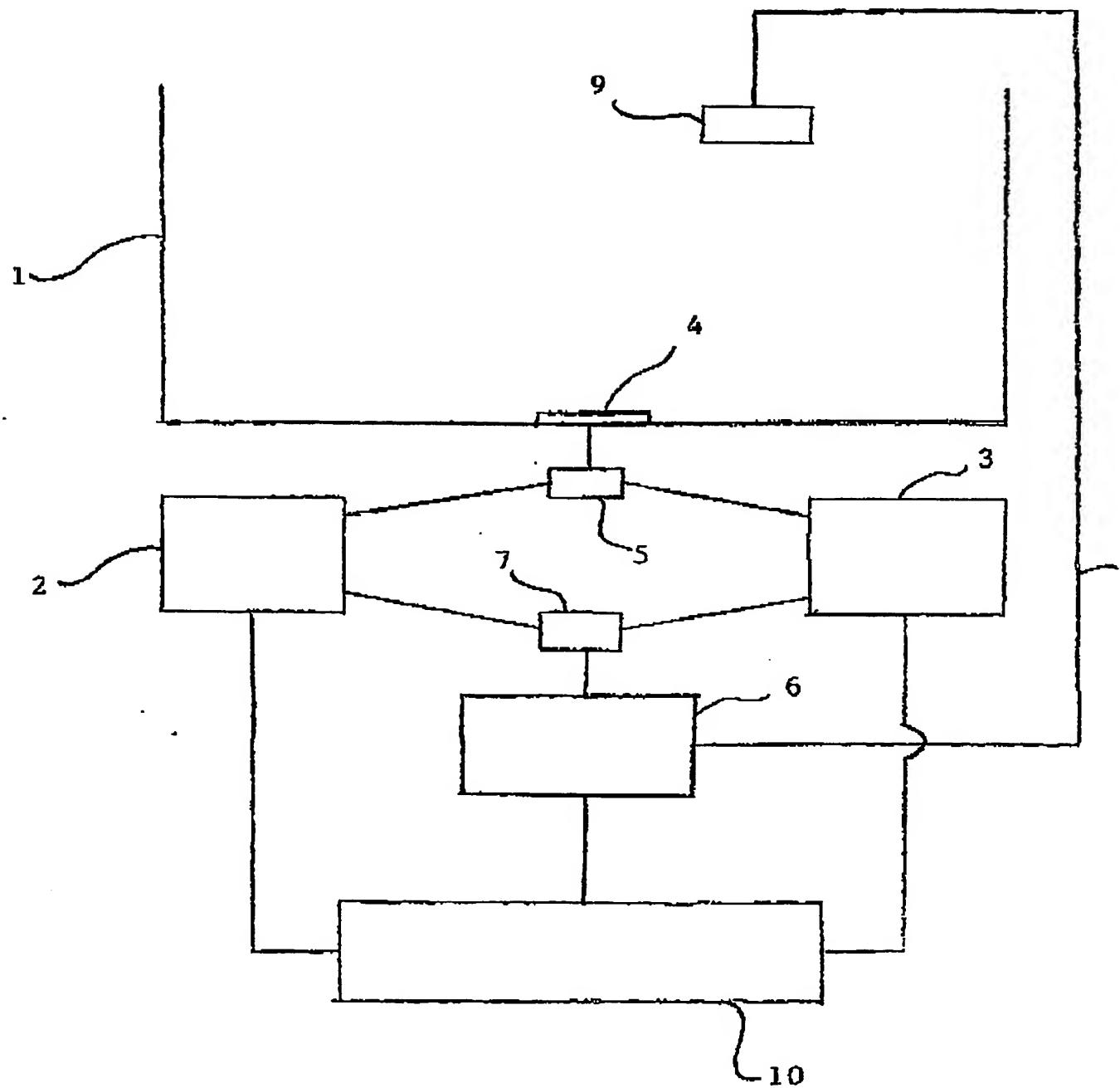
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